

Liebert® GXT4™ Configuration Program

User Manual



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1.0 INTRODUCTION

The Liebert GXT4 configuration program permits customizing features of the Liebert GXT4 UPS.

Most of the UPS's settings can be modified through the onboard LCD, but this configuration program allows additional modifications. This program is compatible only with UPS models beginning with *GXT4*, as in *GXT4-3000RT120*.

1.1 Features

Among the Liebert GXT4's features that can be customized are:

- Output voltage
- Auto-Restart
- Startup on bypass
- Guaranteed shutdown
- Audible alarms, including line-neutral-reversal, missing-ground wiring alarm (500~3000VA, 120V models only), Low Battery Warning alarm time
- Frequency converter operation with a fixed output frequency of 50Hz or 60Hz
- Auto-Battery test
- Auto-Battery test interval
- Shutdown setting of Pin 1 & 2 (Any Mode Shutdown)
- Parallel mode (model only GXT4-10000RT230)
- ECO mode (economy operation)
- Programmable outlet groups (only for 500~3000VA models)

1.2 Requirements

This program requires:

- A Liebert GXT4 UPS (model number must begin with *GXT4*, as in *GXT4-1500RT120*)
- A computer, either a tower or laptop, with:
 - Microsoft® Windows® XP or later operating system
 - CD/DVD drive
 - Open USB port
- USB cable (included in the UPS accessory package)

2.0 COMMUNICATION

This section details how to establish communication with the UPS, including connecting the USB cable, starting the configuration program and communicating with the UPS.

2.1 Connecting the USB Cable

Proper installation requires connecting the USB cable between the UPS and the computer before starting the configuration program.

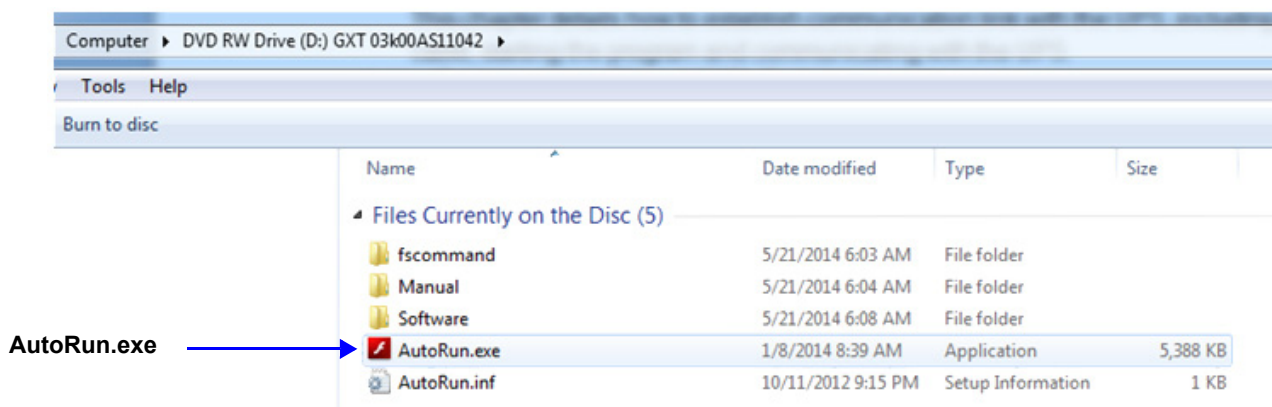
To connect the USB cable:

1. Connect one end of the USB cable to the USB port on the UPS.
2. Connect the other end of the USB cable to a USB port on the computer.

2.2 Starting the Configuration Program

To start the program:

1. Place the CD into the CD/DVD drive of the computer. The computer should immediately display the main menu.
2. If the program does not run the program automatically, use the Windows Explorer to navigate to the CD/DVD drive (this typically is drive letter "D").
3. Find and double-click the *AutoRun.exe* file on the CD to start the program.

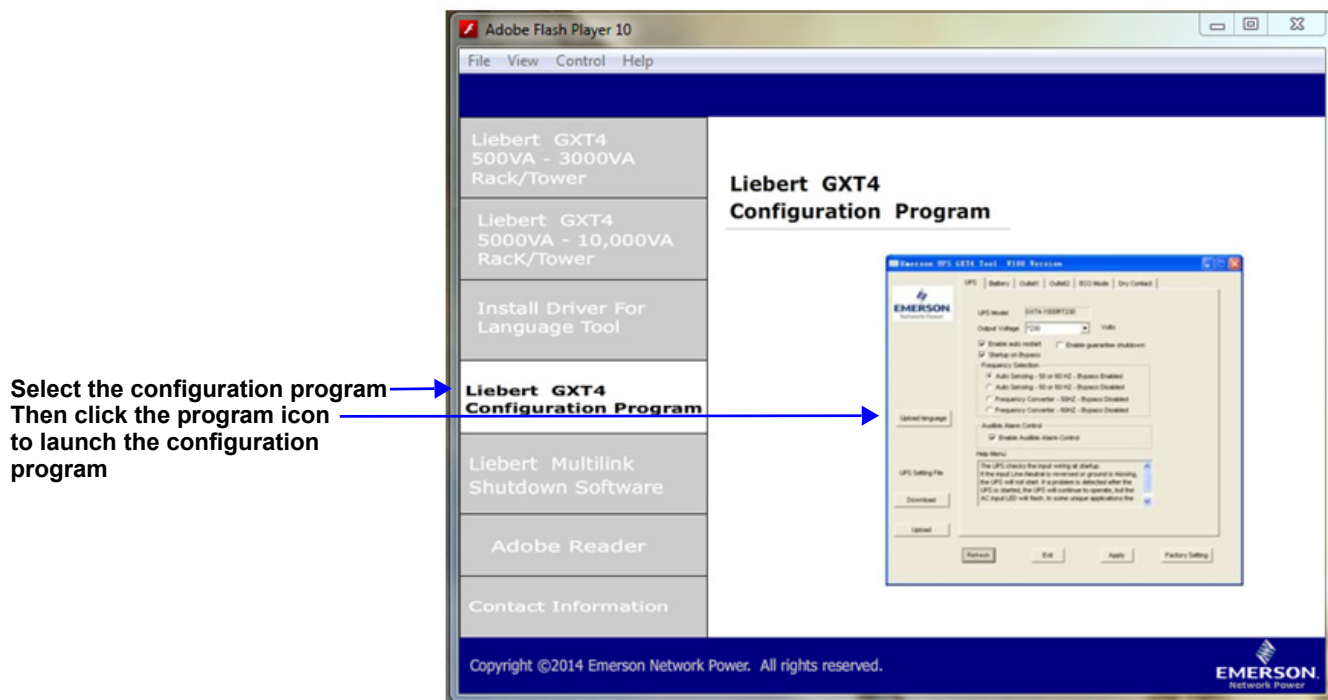


The program's main menu should appear.



2.3 Communicating With The UPS

From the main menu, select the Liebert GXT4 Configuration Program and click the program icon to launch the program; see below.



If the configuration program fails to read data from the Liebert GXT4, an error message will be displayed, as shown below.



If this happens:

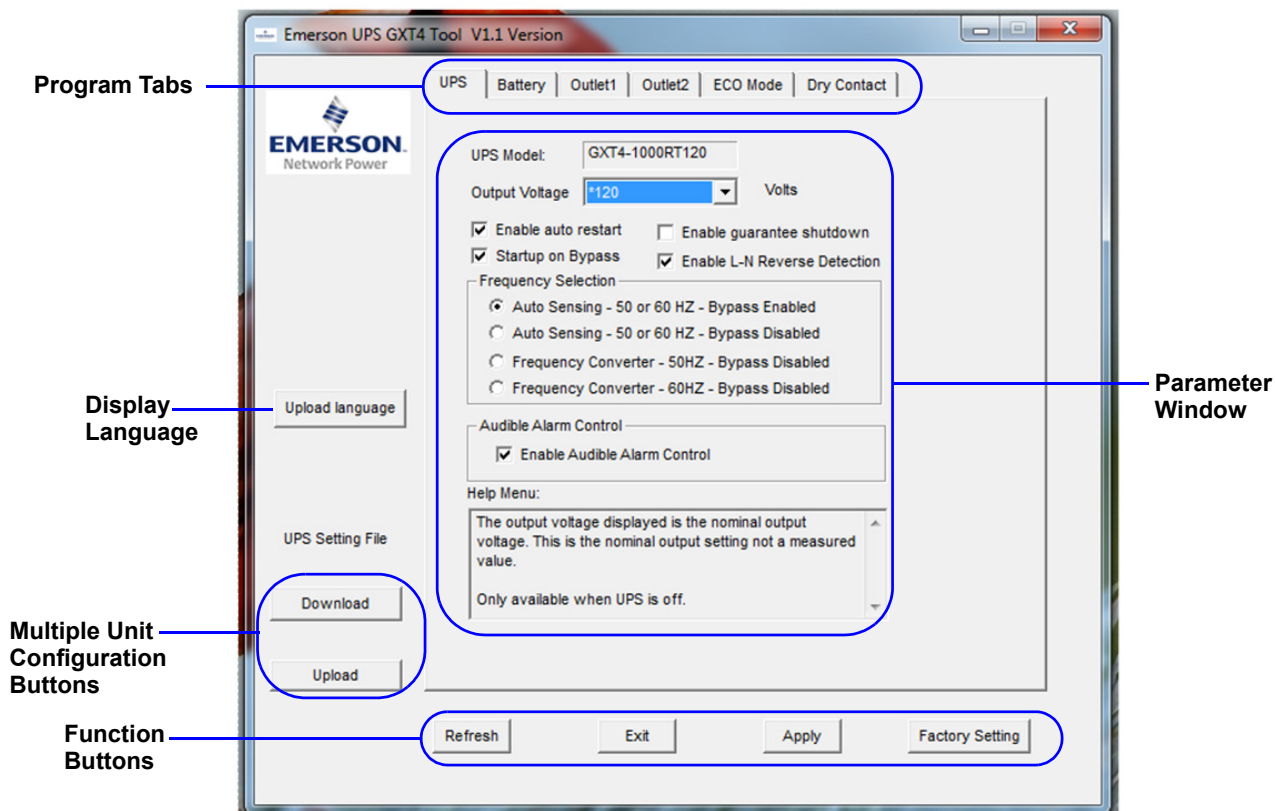
1. Verify that the USB cable is connecting the computer and the UPS. Proper installation requires connecting the USB cable between the UPS and the computer before starting the configuration program.
2. Verify that the UPS has input power.
3. Temporarily remove the communication card from the Liebert IntelliSlot® port of the UPS.
4. Verify that the USB port is not being used by another program on your computer.
5. If Liebert MultiLink® is installed, stop the software by using the Stop command.
6. Click the Retry button on the error message window.
7. Follow the on-screen prompts to continue the configuration.

3.0 CUSTOMIZING UPS PARAMETERS

This chapter describes how to navigate the program, including reviewing and changing UPS configuration settings to customize it for the application.

3.1 Navigation—Configuration Program Main Screen Components

Once the configuration program has communicated with the UPS, the program will open and show the screen below.



- **Program Tabs**—Separate the operating parameters for the Liebert GXT4 UPS
- **Parameter Window**—Contains the parameters specific to the Liebert GXT4 that allow customizing its settings
- **Function Buttons**
 - **Refresh**—Refreshes or reloads the page with the settings currently saved in the UPS. Use this button to reset values to the last saved version should changes be made but not yet applied.
 - **Exit**—Used to exit the program. Using this button will cancel any changes to the settings that were not saved/applied.
 - **Apply**—Saves settings to the UPS; must be clicked to make changes to the UPS.
 - **Factory Setting**—Resets all parameters to the factory defaults
- **Multiple Unit Configuration Buttons**—Download and Upload
These two buttons are used to speed up configuration of multiple units that require the same configuration settings.



NOTE

All UPS units must be the same model and voltage.

Download—Copies the operational parameters on a UPS to a computer hard drive or other storage media, such as a USB drive.

Upload—Copies the configuration settings saved with the Download button to a second UPS to quickly apply the same settings.

- **Change Display Language**—Determines the language that will be used on the UPS's display.

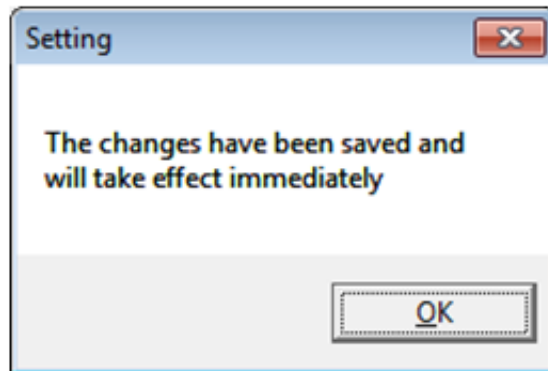
3.2 Reviewing UPS Settings

Once the configuration program has communicated to the UPS, the program can be used to review the UPS settings while the UPS is operating in any mode (such as on utility power, on battery power, on bypass or in ECO mode operation).

3.3 Changing the Configuration Settings

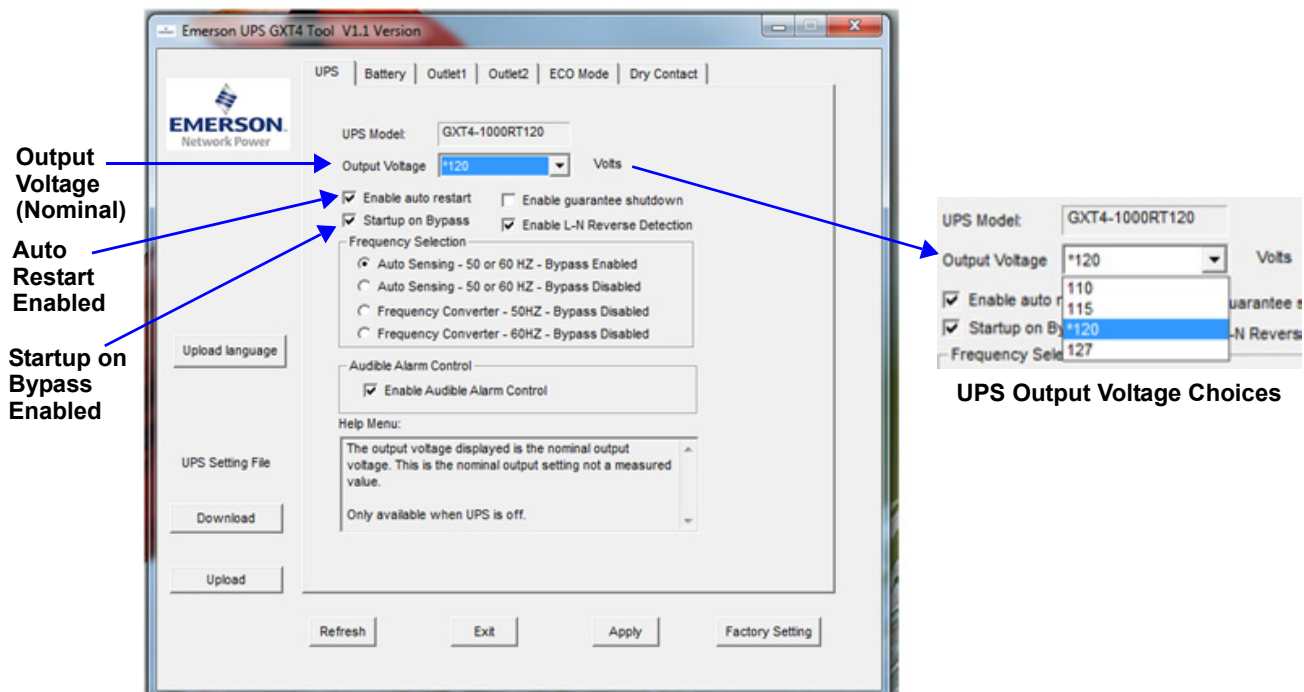
Suggested settings for the UPS model being configured are available in drop-down menus and with radio buttons and check boxes. Most UPS settings can be changed while the UPS is operating in any mode, but changing some settings on the UPS and Parallel tabs require the UPS to be in Standby mode (AC input power available, no output power available).

Changing any value by selecting/deselecting a setting in the Parameter window will not immediately change the settings in the UPS. The displayed settings may be modified until they are satisfactory. Then the values may be saved with the Apply button. Whenever a value is saved, the message below will be displayed.



3.3.1 Parameters Tabs—UPS

The UPS tab allows changing the default output voltage. This should match, as close as possible, the input voltage where the UPS is installed. This tab also allows changing how the UPS will start and can also operate as a frequency converter.



Output Voltage Selection

The output voltage displayed in the Output text box is the nominal input/output voltage rather than a measured value. The drop-down box will show the L-N voltages available. Select the voltage that matches the utility voltage at the site.

Enable Auto Restart

If input power is unavailable for an extended time, the UPS will shut down when its batteries are depleted or when a shutdown signal is sent by the computer operating system to limit battery depletion (communication data or contact closure). If *Enable auto restart* is checked (✓), the UPS will restart when input power is restored. If the UPS turns off power to the load for any other reason, manual restart is required. Uncheck the *Enable auto restart* box to disable auto restart.

Enable Guarantee Shutdown

If the UPS has reached the Low Battery warning level, the UPS will either continue to shut down or return to utility when the utility power returns, depending on whether *Enable guarantee shutdown* is enabled. If *Enable guarantee shutdown* is checked (✓), then the UPS will continue to shut down even if the utility power returns. If *Enable guarantee shutdown* is unchecked, then the UPS will return to utility when the input power returns.

Startup on Bypass

If *Startup on Bypass* is checked (✓), the UPS will startup on bypass and then transfer to inverter. If *Startup on Bypass* is unchecked, the UPS will startup on inverter.

L-N Reverse Detection—120V UPS (500VA ~ 3000VA Models Only)

The L-N Reverse Detection is possible only for the 120V UPS (500VA ~ 3000VA models). Proper wiring of the receptacle powering the UPS is critical for safety, EMI suppression and surge suppression. The UPS checks the outlet when first plugged in. When the box of *Enable L-N Reverse Detection* (120V UPS only) is checked (✓), alarm of L-N reverse will be enabled. If the line-neutral is reversed or the ground is missing, the UPS will not start.

If an L-N reverse problem is detected after the UPS is started, the Liebert GXT4 will continue to operate, but the AC INPUT LED will flash red. The improperly wired receptacles should be properly connected before the UPS is put into service. When the box of *Enable L-N Reverse Detection* is unchecked, the alarm for L-N reverse will be disabled.

Frequency Selection

The Liebert GXT4 is normally designed for either 50Hz or 60Hz operation, but any model may be used in 50Hz or 60Hz systems. The factory default corresponds to the model. For typical applications, either Auto Sensing - 50 or 60Hz - Bypass Enabled or Auto Sensing - 50 or 60Hz - Bypass Disabled should be selected, depending on the application.

The UPS will automatically detect the utility frequency when it is first plugged in and set the nominal frequency to match.

For some applications, the UPS must be used as a frequency converter. In this application the following options are available:

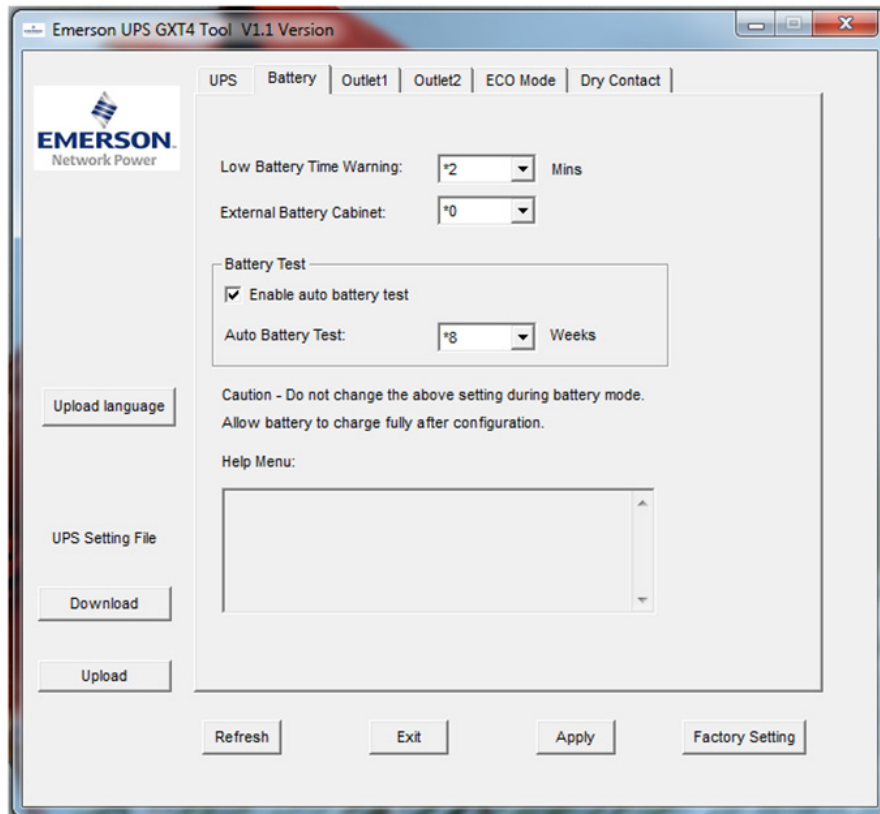
- Frequency Converter - 50Hz - Bypass Disabled mode will provide 50Hz UPS output from any qualified commercial power.
- Frequency Converter - 60Hz - Bypass Disabled mode will provide 60Hz UPS output from any qualified commercial power.

Audible Alarm Control

Audible alarms are enabled if *Enable Audible Alarm Control* is checked (✓). Audible alarms are disabled if *Enable Audible Alarm Control* is unchecked.

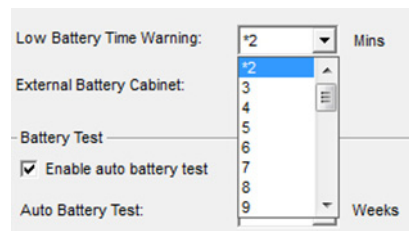
3.3.2 Parameters Tab—Battery

Choices on this tab allow changing from the default low battery warning, external battery cabinet quantity, and the automatic battery test enable/disable and test interval



Low Battery Time Warning

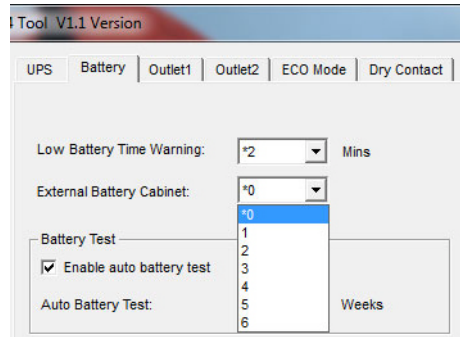
The UPS will estimate operating time when it is operating on batteries. A low battery alarm is activated if the estimated time reaches the specified Low Battery Time, which ranges from 2 to 30 minutes.



**Low Battery
Time
Warning
Choices**

External Battery Cabinets

If additional batteries are attached to the UPS, battery run time estimates are more accurate if the number of *External Battery Cabinet* matches the number of external battery cabinets connected



Auto Battery Test

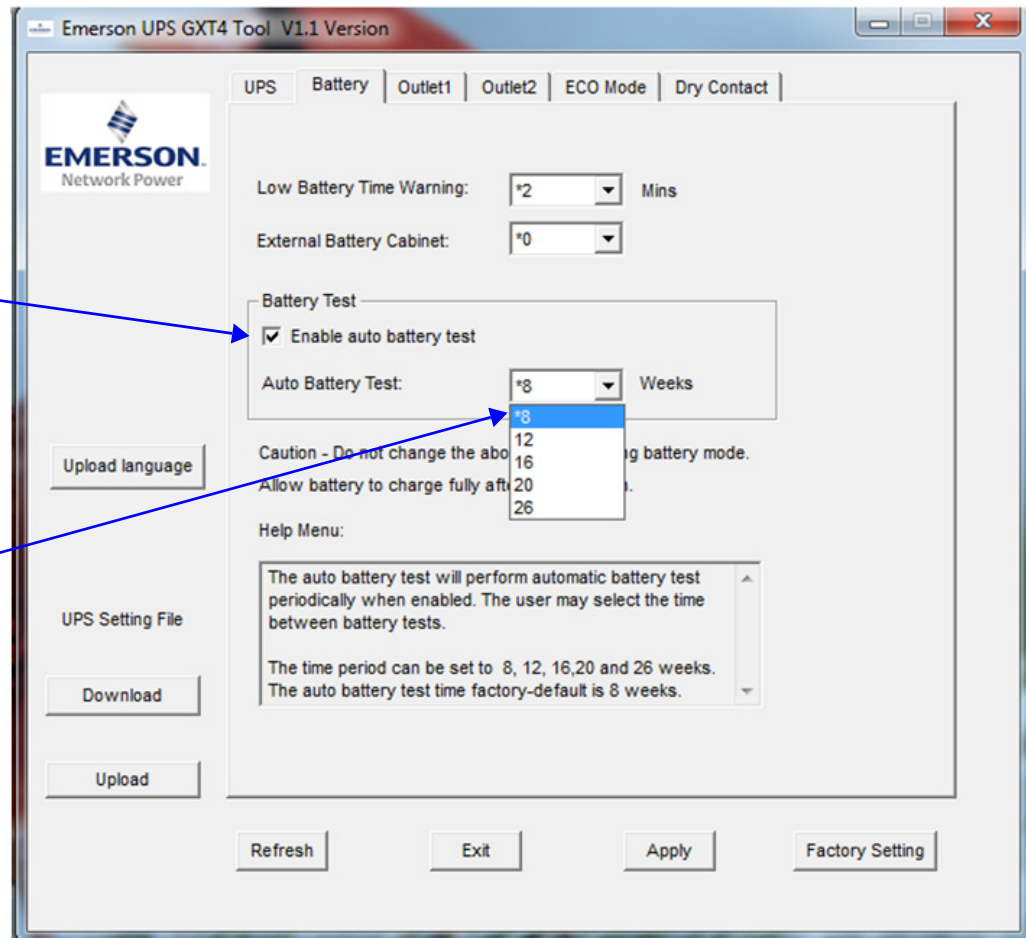
The UPS performs an automated battery test periodically, if enabled. The test is enabled by default. Disabling the test may be preferable for some applications. To disable the periodic battery test, remove the check mark (✓) from the *Enable auto battery test* box.

Auto Battery Test Time

The automated battery test can be set to run every 8, 12, 16, 20 and 26 weeks.

Battery Test must be enabled for the interval to be changed. (Battery Test is enabled by default.)

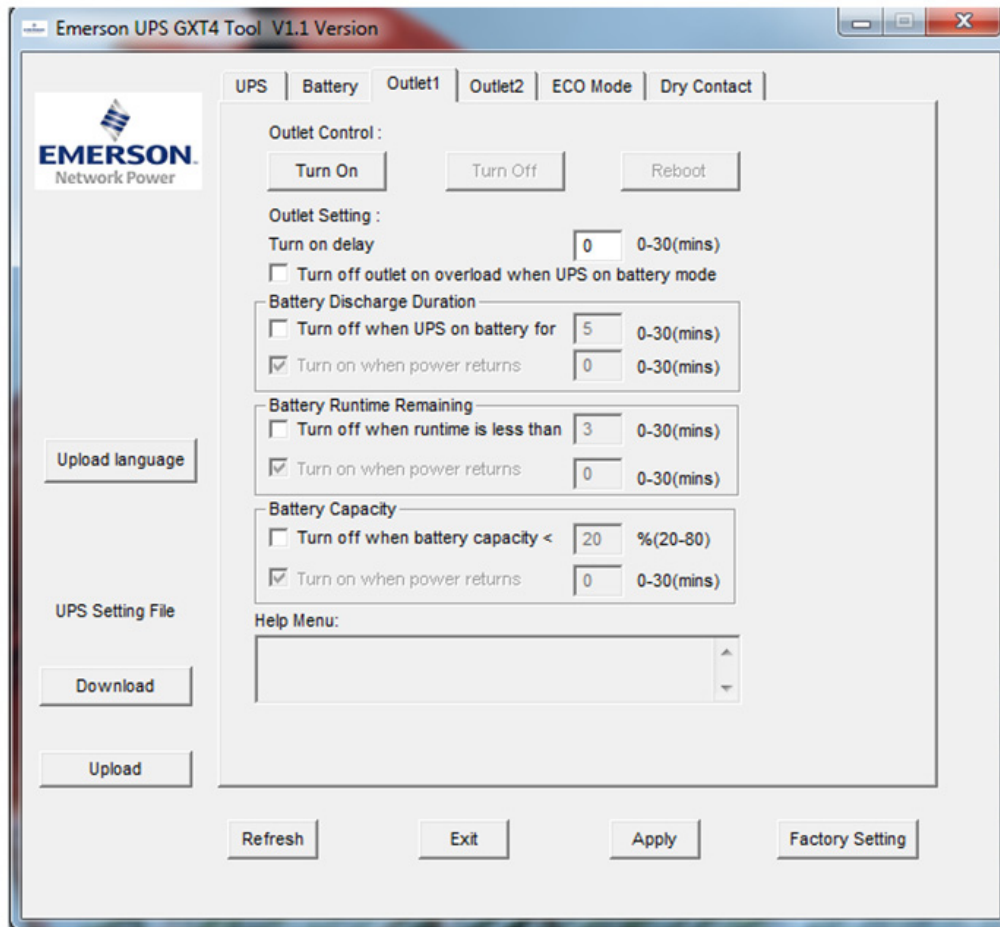
Drop-down list permits changing the Battery Test interval.



3.3.3 Parameters Tab—Outlet1

The Liebert GXT4 micro UPS models (500VA - 3000VA) have two groups of programmable outlets. The Outlet1 tab permits programming “Outlet Group 1” to:

- Shed connected equipment when the UPS is operating on battery (extending run time for equipment that is more critical)
- Resume powering outlets sequentially when the UPS restarts after a complete battery discharge
- Shed connected equipment should the UPS be overloaded
- Turn the UPS Off to prevent unauthorized equipment from being powered
- Reboot the UPS (turn Off for 10 seconds, then back On) to restart equipment that might be hung.



Outlet Control

The Outlet Control choices are:

- **Turn on delay:** Turn outlet On immediately; available only when outlet is Off.
- **Turn Off:** Turn outlet Off immediately. Outlet will remain Off until it is turned On manually.
- **Reboot:** Turn outlet Off and back On immediately; available only when outlet is On.

Outlet Setting

- **Turn on delay:** Outlets will be on after UPS start-up, the time of delay can be configured to 0 ~ 30 minutes.
 - *Turn off outlet on overload when UPS on battery mode*
Enable: Put a check mark (✓) in *Turn off outlet on overload when on battery mode*. Outlet 1 group will turn Off if there is an overload while the UPS is operating on battery power.
Disable: Remove the check mark (✓) from *Turn Off outlet during overload when UPS on battery mode*. When this is disabled, the outlet group will remain On if there is an overload while the UPS is on operating battery power.

Battery Discharge Duration

If *Turn off when UPS on battery for* is checked (✓), the outlets will turn Off after a delay of battery discharging. The delay can be set to 0 ~ 30 minutes.

If *Turn on when powers returns* is checked and the outlets are turned Off because of Battery Discharge Duration, the outlets will be On after a delay to permit verifying the utility. The time of delay can be configured to 0 ~ 30 minutes.

Battery Runtime Remaining

If *Turn off when Runtime less than* is checked (✓), the outlets will turn Off when the runtime drops below a set value. The value can be set to 0 ~ 30minutes.

If *Turn on when powers returns* is checked and the outlets have been turned Off because of Battery Runtime Remaining, power will return to the outlets after a delay of verifying the utility. The delay can be set to 0 ~ 30 minutes.

Battery Capacity

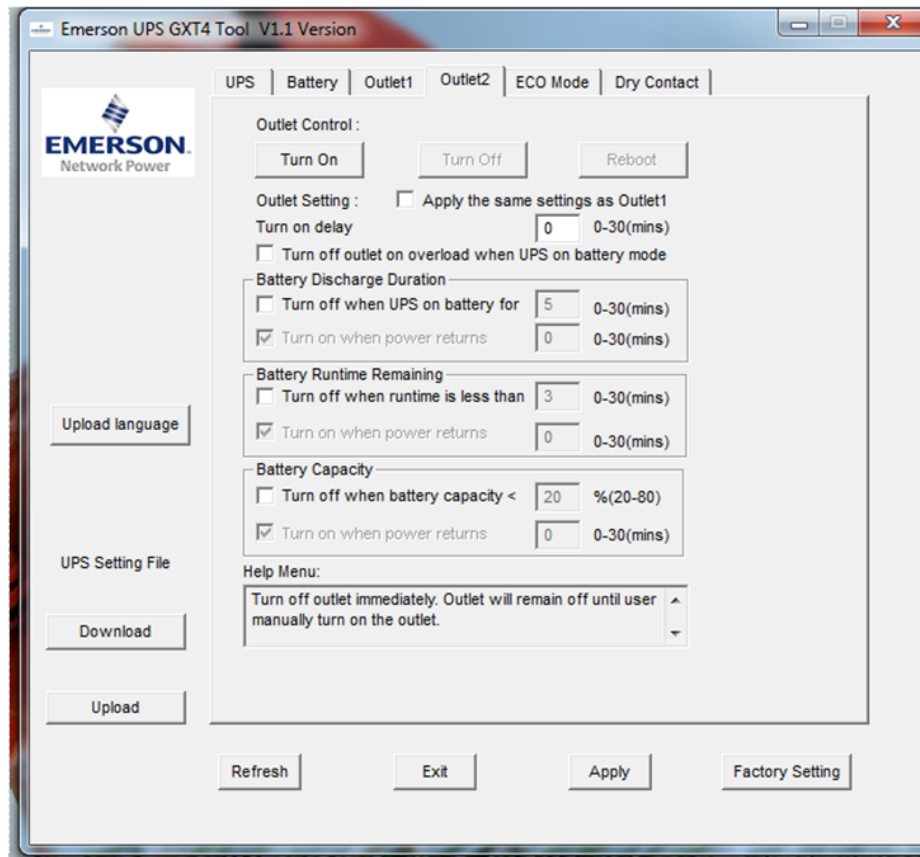
If *Turn off when battery capacity <* is checked, the outlets will turn Off when the capacity drops below a set value. The value can be set to 20 ~ 80%.

If turn on when powers returns is checked, and the outlets have been turned Off because of Battery Runtime Remaining, power will return to the outlets after a delay of verifying the utility. The delay can be set to 0 ~ 30 minutes.

3.3.4 Parameters Tab—Outlet2

This tab permits programming Outlet Group 2 with the same settings as made to Outlet Group 1. To do so, put a check mark (✓) beside *Apply the same settings as Outlet1*.

Different settings can be programmed based on system's setup and requirements of the connected equipment.



3.3.5 Parameter Tabs—ECO Mode (Economy Mode)

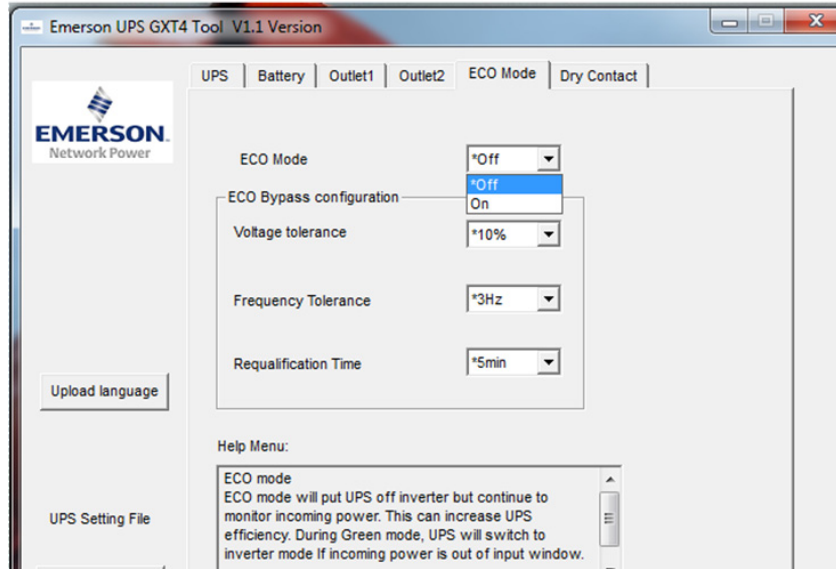
This tab permits programming the Liebert GXT4 to operate in ECO mode, reducing energy consumption through more efficient operation.

ECO mode powers the connected load with utility power, when it is within specified parameters. This bypasses the inverter.

The tab also permits setting the requalification time—how long utility power must meet specified limits—before the UPS may return to ECO mode. The default is 5 minutes.

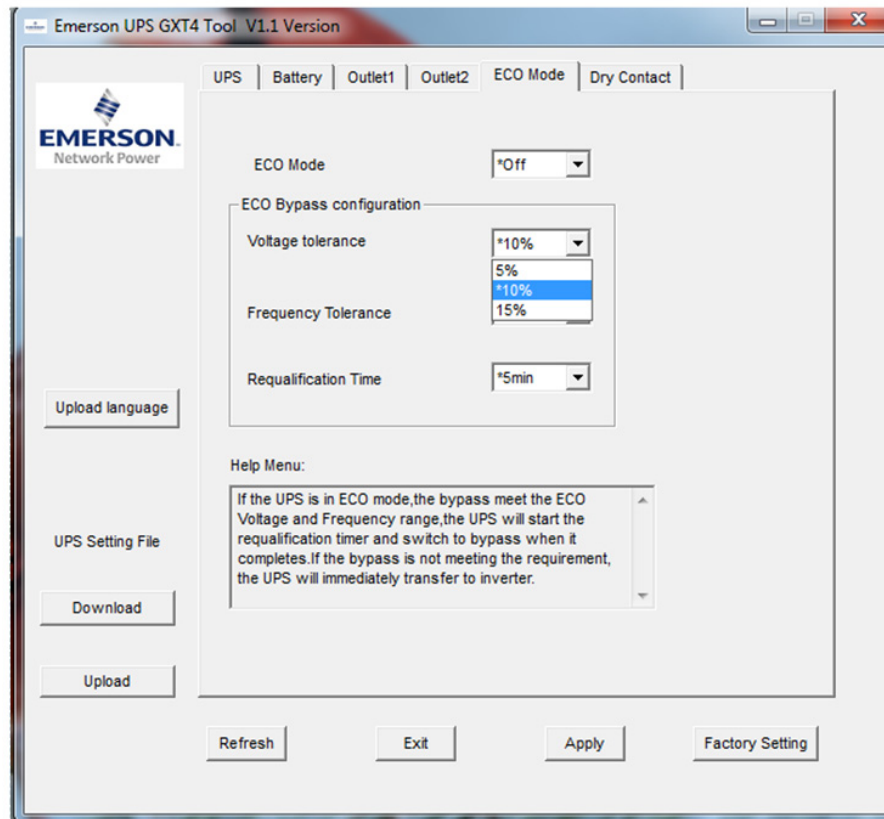
ECO Mode

ECO mode may be On or Off. The choice is made through a drop-down list. The default setting is Off, meaning the UPS always powers the connected load through the inverter.



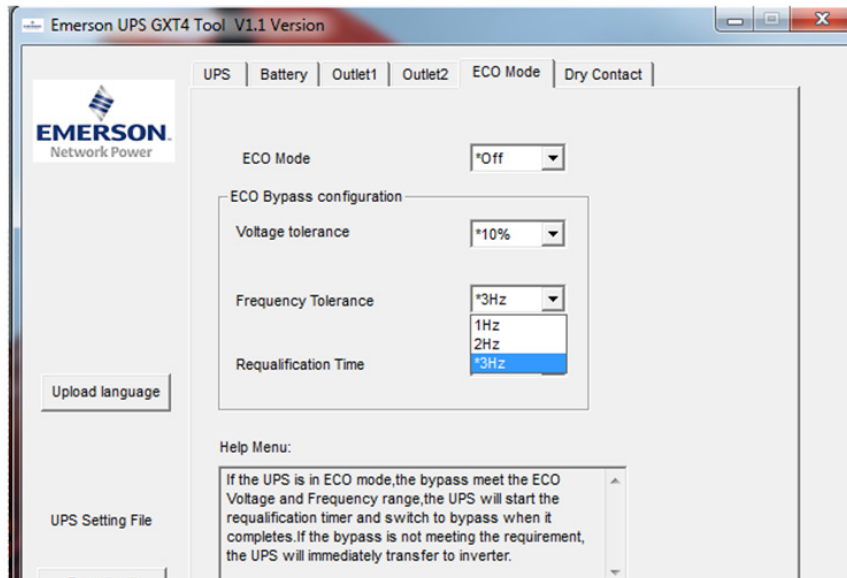
Voltage Tolerance

The range of the qualified input voltage for ECO bypass output. When ECO mode is enabled and input voltage is within the specified voltage tolerance, UPS will transfer to bypass output if Frequency Tolerance and Requalification Time also are OK. When on ECO Bypass, if the input voltage goes out of tolerance, the UPS will transfer back to inverter. The Voltage tolerance can be set to 5%, 10% and 15%. The default is 10%.



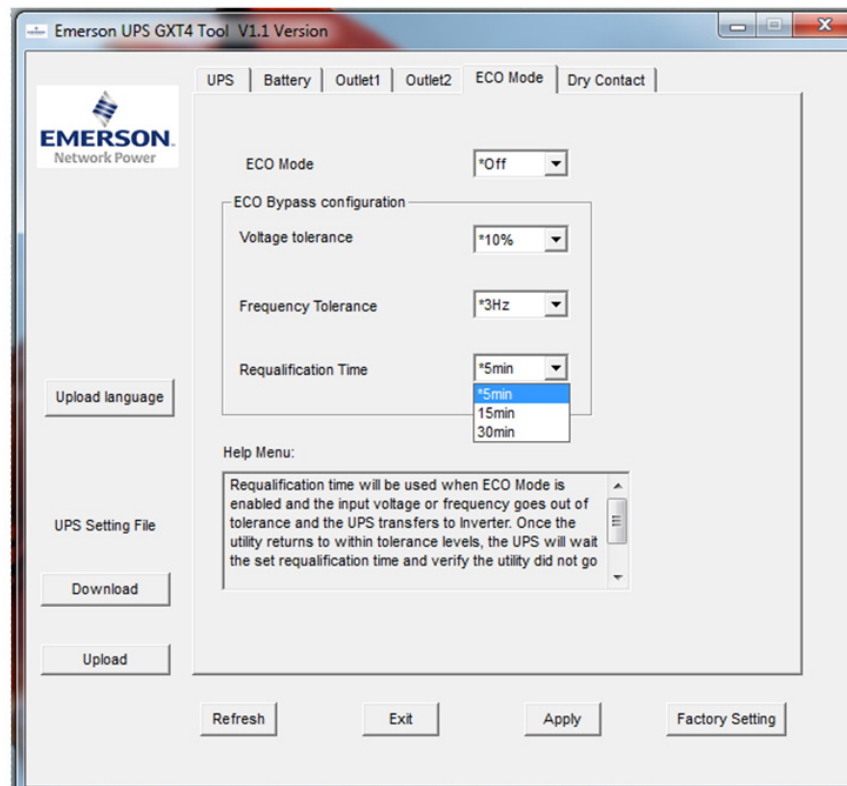
Frequency Tolerance

Utility power must be within this specification for ECO Mode operation. When ECO Mode is enabled and Frequency Tolerance is within the specifications, The Liebert GXT4 will transfer to ECO Mode if Voltage tolerance and Requalification Time are OK. When in ECO Mode, if the frequency goes out of tolerance, the UPS will transfer back to Inverter. The value of Frequency tolerance can be selected from 1Hz, 2Hz and 3Hz.(default is 3Hz).



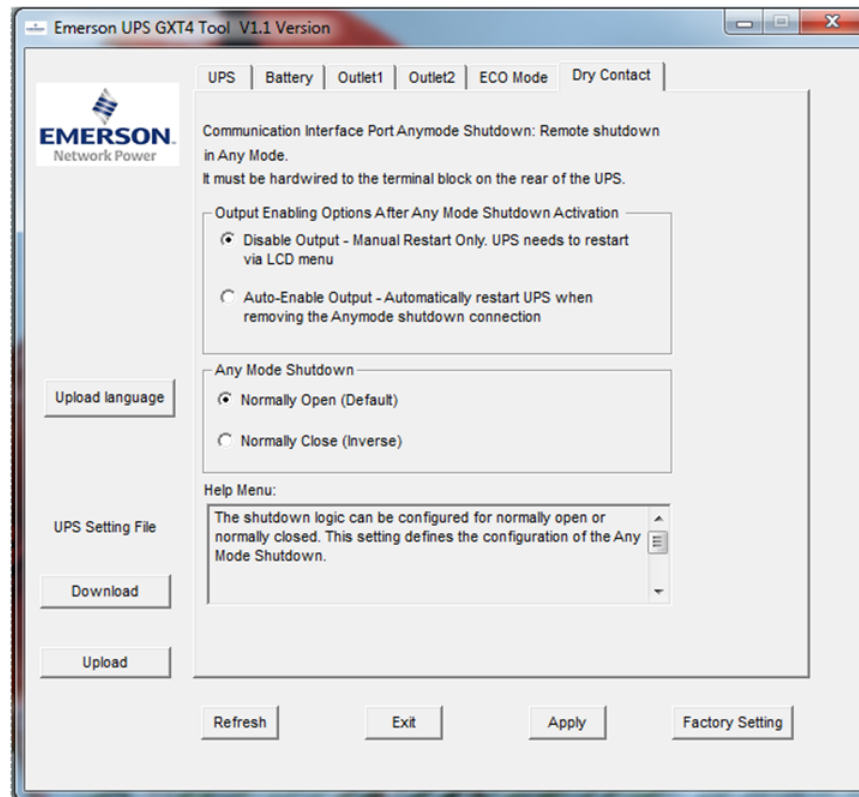
Requalification Time

Once the utility is within tolerance levels, the UPS will wait the set requalification time to ensure that utility power is stable. Once the input power qualification requirements have been met, the UPS will revert to ECO mode operation. The Requalification Time can be selected from 5 minutes, 15 minutes and 30 minutes (default is 5 minutes).



3.3.6 Parameter Tabs—Dry Contacts

This tab allows the operational settings for the Any Mode Shutdown terminal block (Pins 1-2)



Disable Output—Manual Restart Only

For particular industrial applications and special computer applications, the UPS may be monitored and controlled using external voltages and relay contact signals. An Any Mode Shutdown command can be activated on the terminal block of the UPS by operating Pin1 - Pin2. If selected, the *Disable Output - Manual Restart Only* setting will require the UPS to be manually restarted by pressing the Start button on the front panel of the UPS after the Any Mode Shutdown signal on the terminal block has been removed.

Auto-Enable Output Automatically

For particular industrial applications and special computer applications, the UPS may be monitored and controlled using external voltages and relay contact signals. An Any Mode Shutdown command can be activated on the terminal block of the UPS by operating Pin1 - Pin2. If selected, the *Auto-Enable Output Automatically* setting will automatically restore the UPS output after Any Mode Shutdown signal on the terminal block has been removed.

- **Default operation—Normally Open**

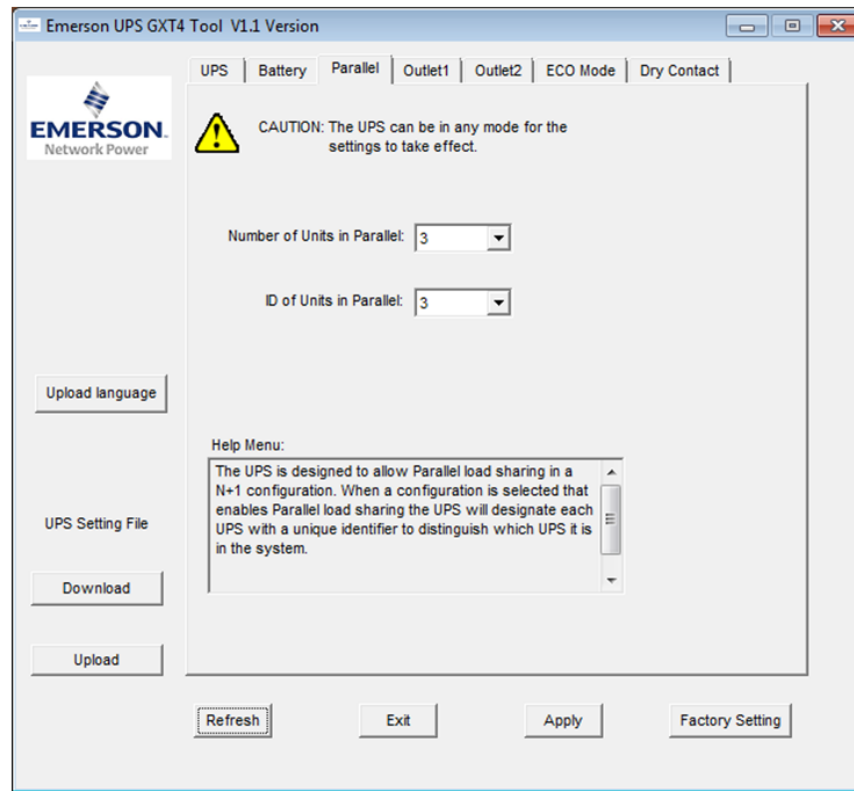
The shutdown logic can be configured for normally open or normally closed. This setting defines the configuration of the Any Mode Shutdown. If selected, the Any Mode Shutdown will operate when Pin1 & Pin2 of the terminal block are connected.

- **Inverted operation—Normally Closed**

The shutdown logic can be configured for normally open or normally closed. This setting defines the configuration of the Any Mode Shutdown.

3.3.7 Parameters Tabs—Parallel (GXT4-10000RT230 Only)

All Liebert GXT4 units in a parallel setup must be GXT4-10000RT230 units. The Parallel tab is visible when connected to GXT4-10000RT230 units.



Number of Units in Parallel

Liebert's GXT4-10000RT230 UPS is designed to allow Parallel load sharing in an N+1 redundancy configuration. The value of *Number of Units in Parallel* can be selected as 1, 2 and 3.

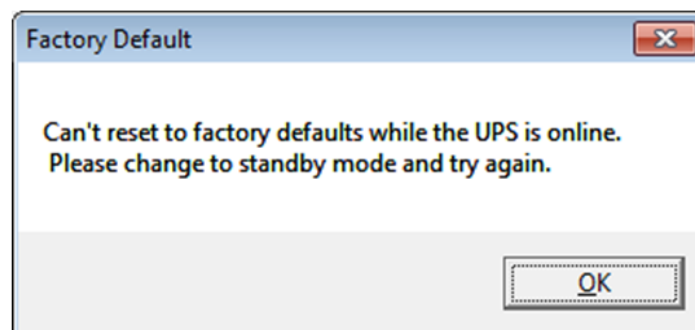
ID of Units in Parallel

Set the identifier of the unit. Each unit in the parallel system will be set a unique ID to distinguish among the UPS's in parallel.

3.4 Resetting to Factory Settings

To restore the Liebert GXT4 to factory settings, click the *Factory Setting* button and select *Yes* button.

Settings can be reset to defaults only when the UPS is in Standby mode. If the UPS is online, turn Off the outputs and restore to factory settings. If the UPS is not in Standby mode, this message will be displayed.



3.5 Multiple Unit Configuration Buttons

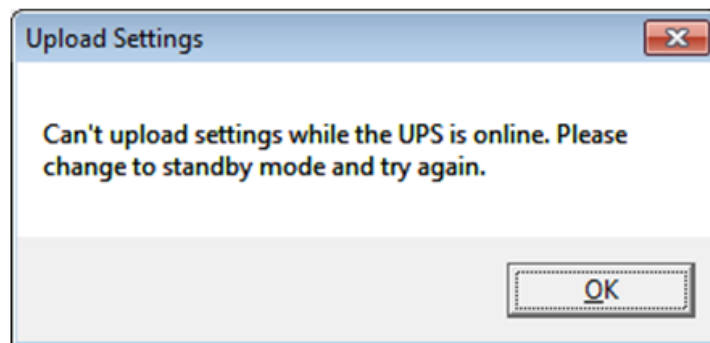
These two buttons are used to speed up configuration of multiple units that require the same configuration settings.



NOTE

All UPS units to be given the same settings must be the same model and voltage.

- **Download**—Configure one UPS for optimal operation, then use this button to save the settings file to the computer's hard drive or other media storage, such as a USB drive. This creates a backup configuration file to preserve settings and to configure multiple UPS's. Clicking the *Download* button brings a pop-up window asking where to save the file as well as the file name.
- **Upload**—Connect your computer with the USB cable to a second UPS and use this button to apply the configuration settings to the second and subsequent UPS's. The Upload button can be used only on a Liebert GXT4 that is in Standby mode. If the UPS is not in Standby mode, this message will appear.



- Click the *Upload* button. This brings a pop-up window to allow locating the file saved in the download above.
- Select the file, and click *Open*.
- When the pop-up window closes, click the *Apply* button within the configuration program to save the settings to the second UPS.
- Click *Yes* when prompted on the confirmation pop-up to apply the changes

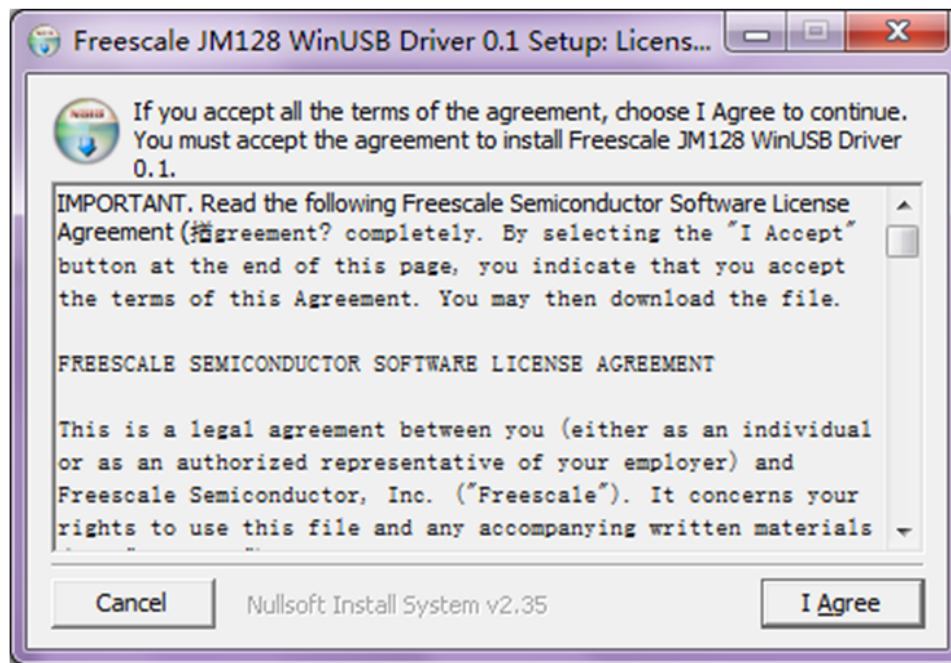
3.6 Additional Language Kits

The CD supplied with the Liebert GXT4 UPS has files for all the languages that are supported by the LCD. Additional languages are available as options.

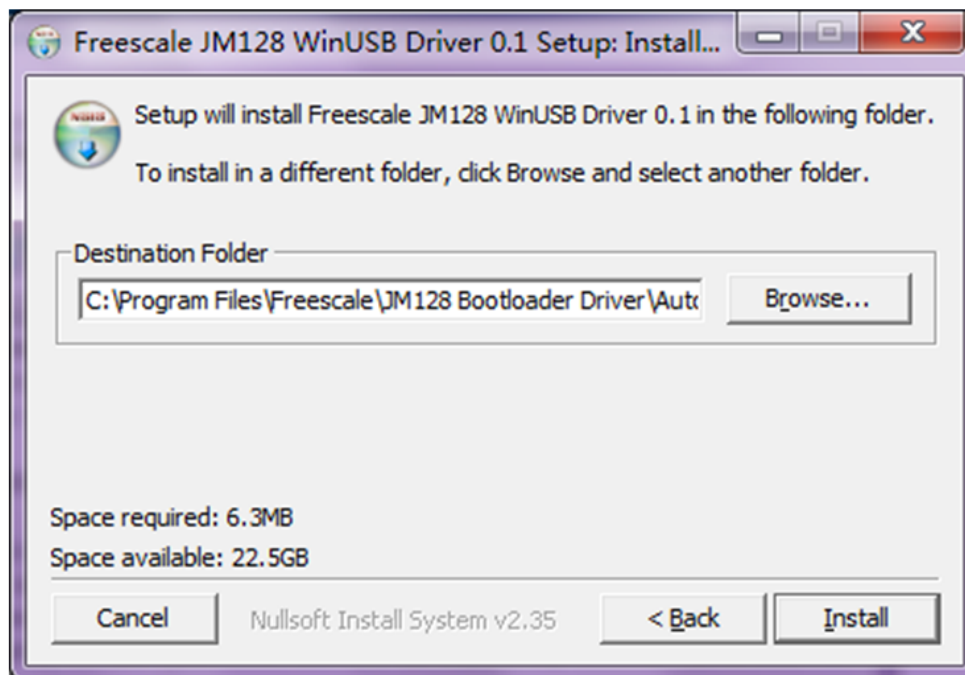
3.6.1 Driver Installation

Updating the Liebert GXT4 language files requires installing a hardware driver on the connected computer. The driver communicates with the UPS display controller while in Language Update mode. To install the driver:

- Place the Configuration Program CD into the CD drive of the host computer. An auto-play screen will launch.
- Click the link *Install Language Update USB Driver*.
- Run the driver JM128 Bootloader WinUSB Driver Installer.exe in the folder *GXT4 Flash update \driver*. Review the terms of agreement and click the I Agree button to continue or click Cancel to quit without installing the driver.

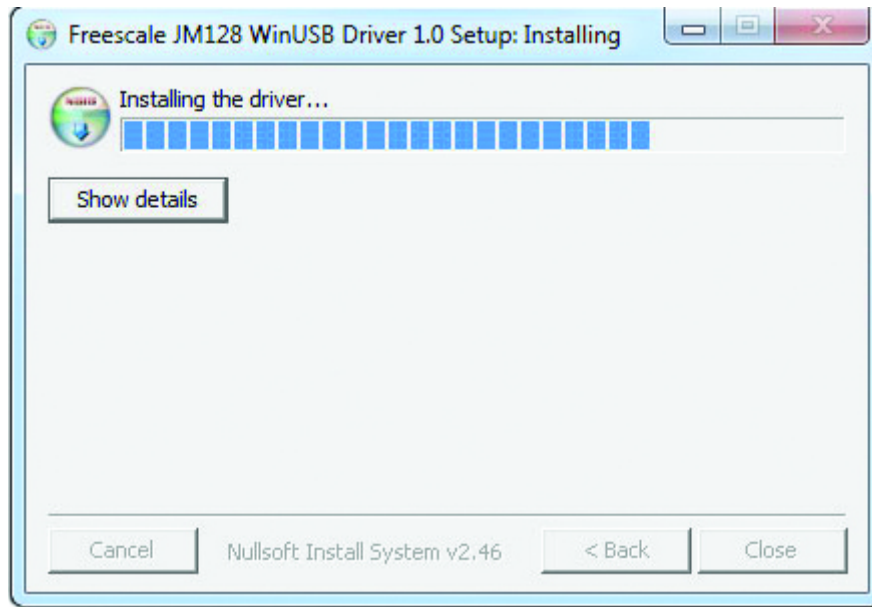


4. Choose a destination folder and click the *Install* button to continue. Emerson recommends using the default Windows folder.



5. The driver should install within a few seconds. When the prompt *Completed* appears, the driver is installed.

- Click the *Close* button to finish the installation.

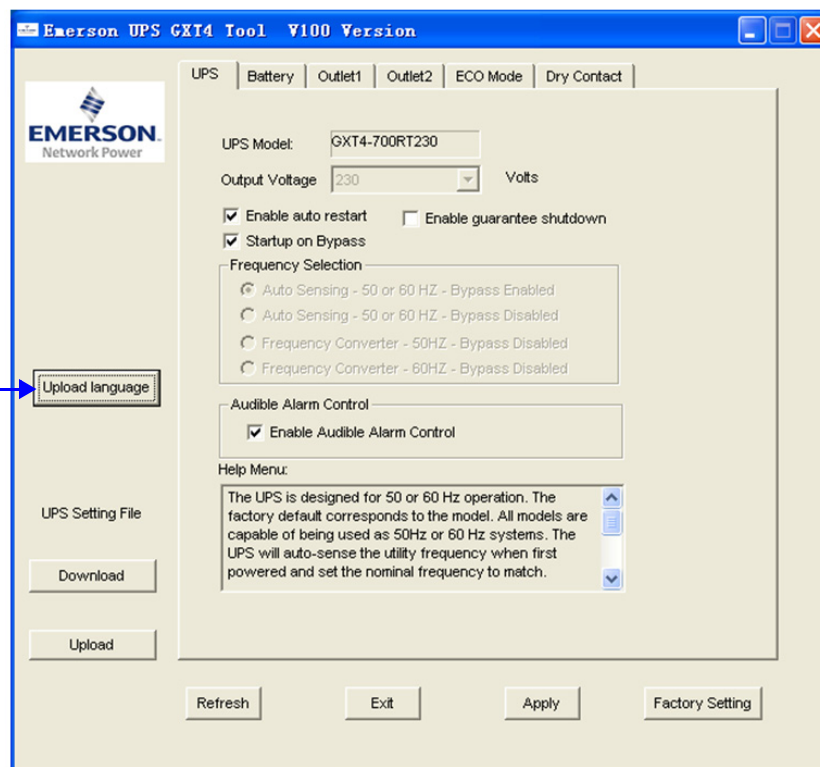


3.6.2 Changing the UPS Display Language

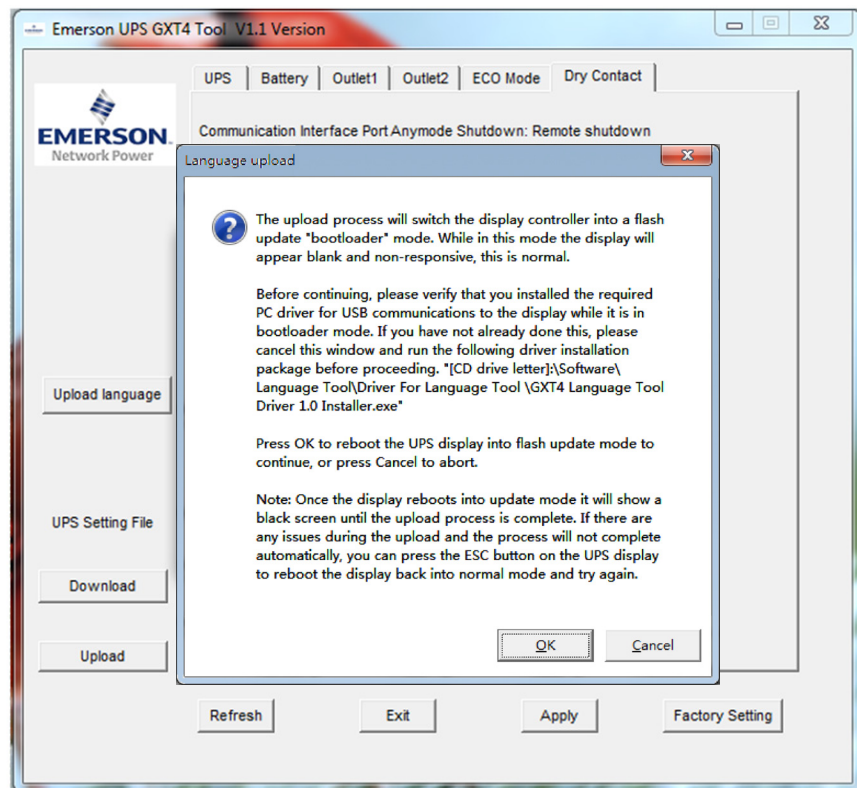
To change the language displayed on the Liebert GXT4's LCD:

- Connect the other end of the USB cable to an available USB port on the host computer.
- Launch the Liebert GXT4 configuration software Emerson UPS GXT4 Tool.exe.
- Click the *Upload language* button, as shown below.

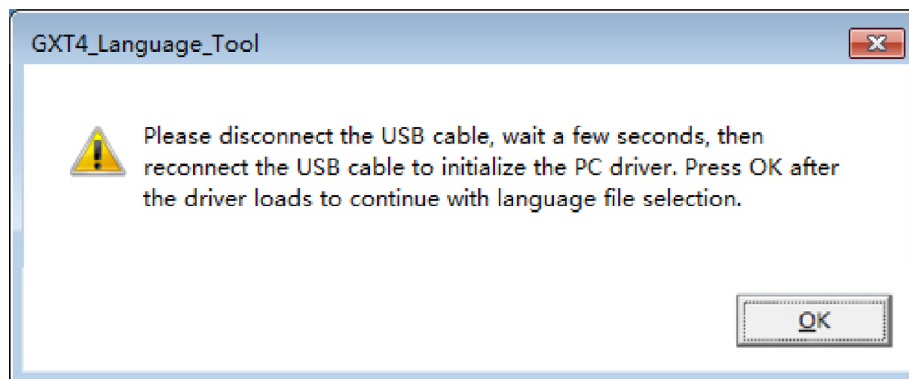
Upload language button



The *Language Upload* confirmation window will appear, as shown below. As the screen notes, the screen will appear blank and non-responsive. The screen will turn black during the upload

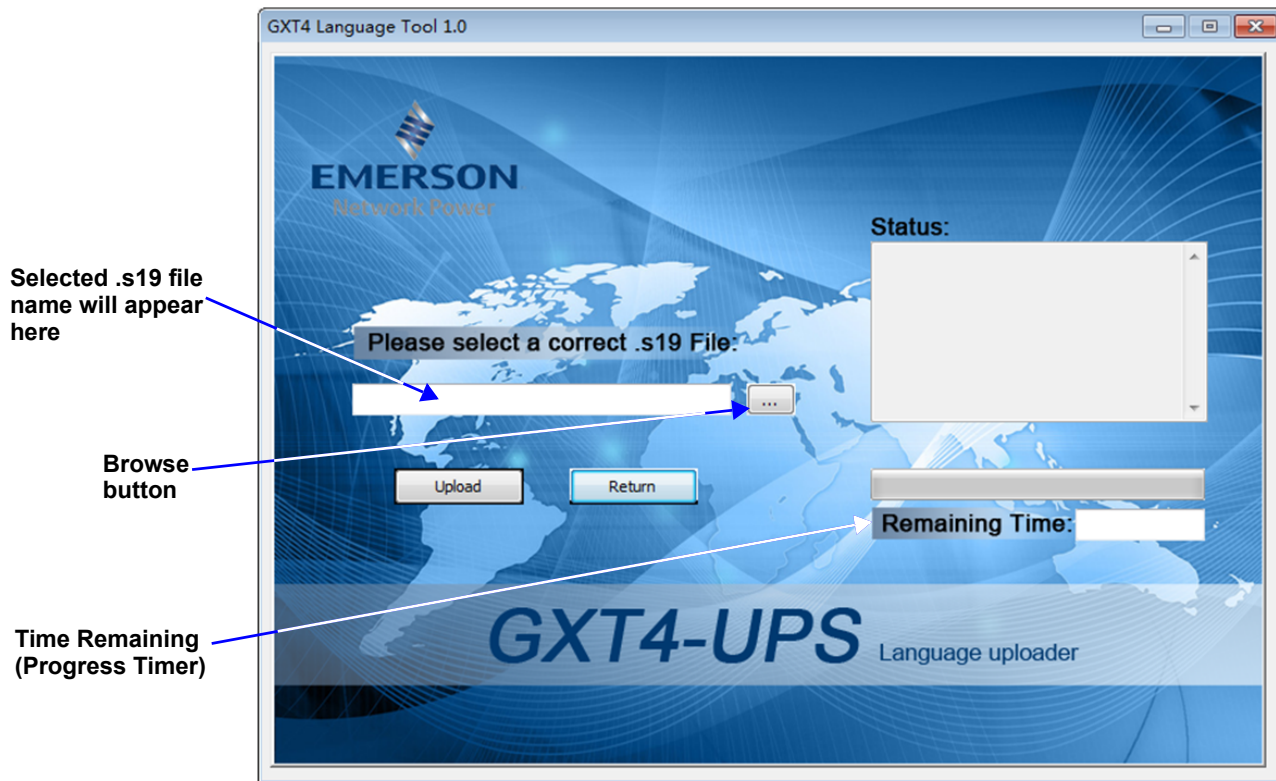


4. Press OK to continue and the Language Tool program will open the window shown below; press the *Cancel* button to abort.
5. The program will display the prompt below

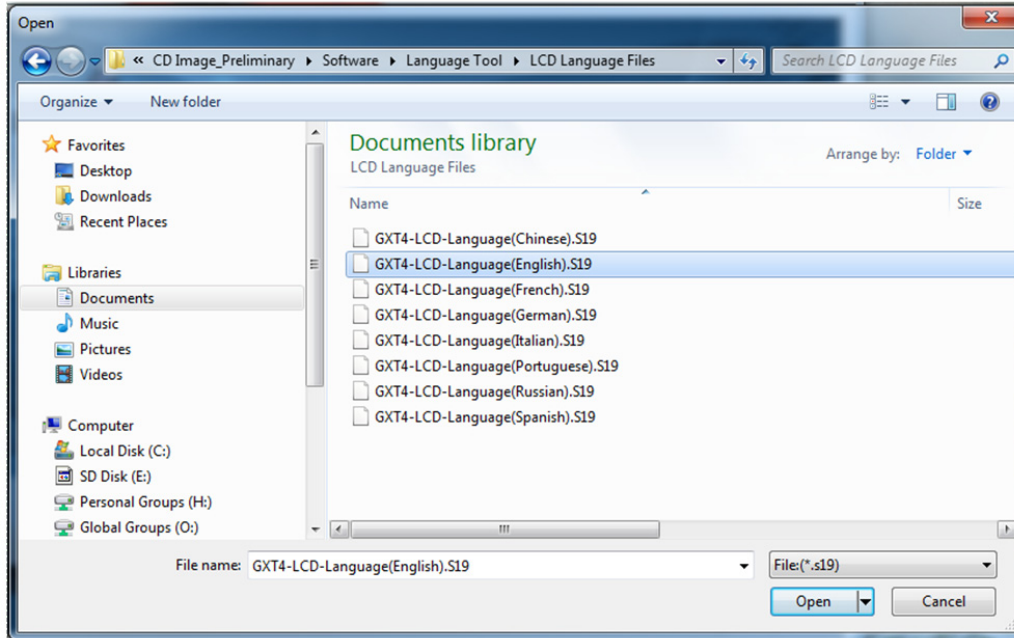


6. Unplug and then reconnect the USB cable to the host computer to initialize the Windows driver.

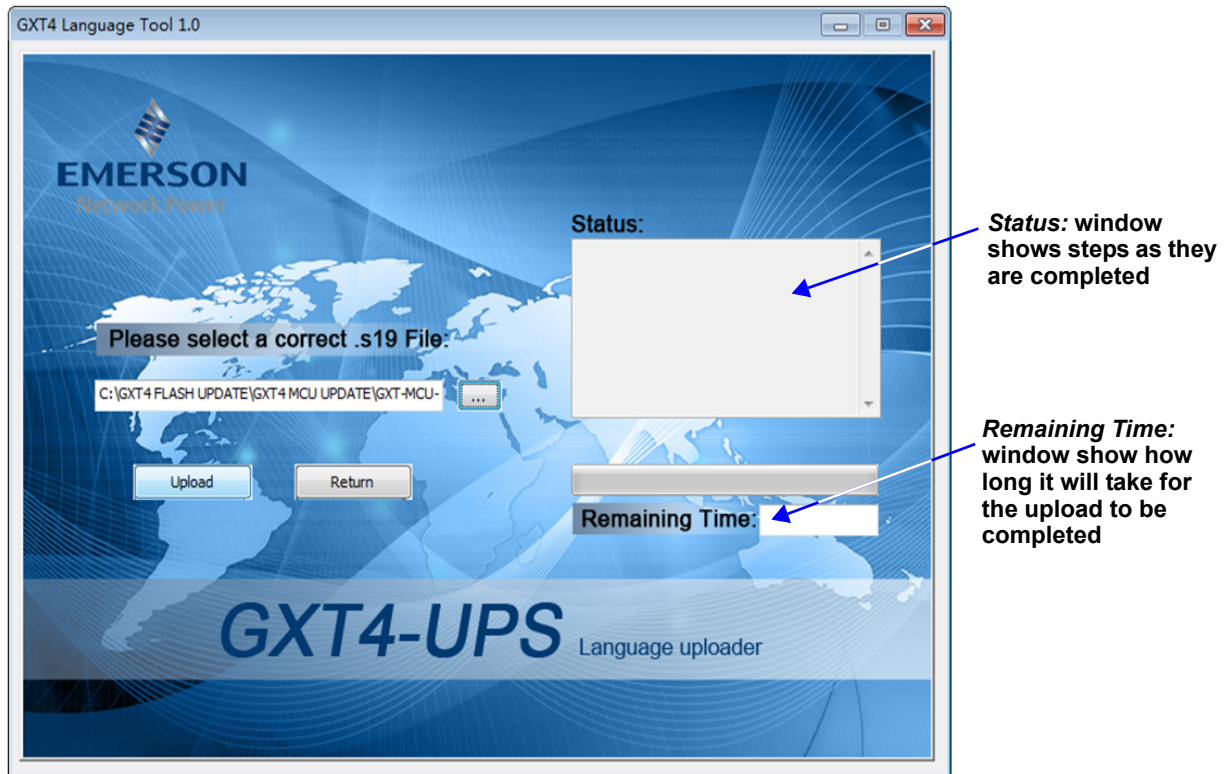
7. Click the *Browse* button (...) shown below to choose the target file.



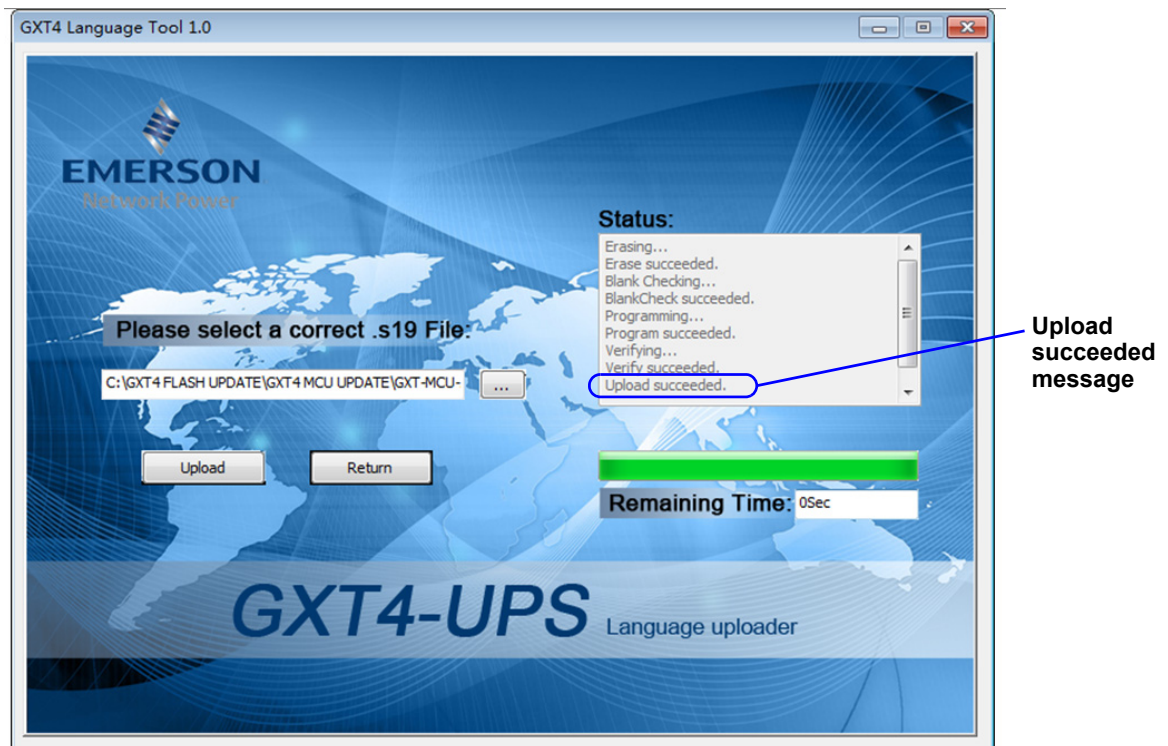
8. Select the target file you want to upload from the list, as shown below, to select the language desired.



9. Click the Upload button to start. *Status* and *Remaining Time* indicators on the right side of the window, as shown below, detail the upload's progress.



10. When the prompt *Upload succeeded* is displayed and the Remaining Time shows 0 seconds left, the upload is finished, as shown below, and the UPS will reboot.



11. On the UPS's LCD, select *MAIN MENU* -> *2 CONFIGURATION* -> *6 LCD* -> *1 LANGUAGE* to switch to the newly uploaded language.

Technical Support / Service

Web Site

www.liebert.com

Monitoring

liebert.monitoring@emerson.com

800-222-5877

Outside North America: +00800 1155 4499

Single-Phase UPS & Server Cabinets

liebert.upstech@emerson.com

800-222-5877

Outside North America: +00800 1155 4499

Three-Phase UPS & Power Systems

800-543-2378

Outside North America: 614-841-6598

Environmental Systems

800-543-2778

Outside the United States: 614-888-0246

Locations

United States

1050 Dearborn Drive

P.O. Box 29186

Columbus, OH 43229

Europe

Via Leonardo Da Vinci 8

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